

REMARKS

In the Office Action, Claims 1-18 and 20-24 are pending and were examined. In response, Claims 1, 11, 16 and 21 are amended, no claims are cancelled and no claims are added. Applicants respectfully request reconsideration of pending claims in view of at least the following remarks.

I. Claim Rejections Under 35 U.S.C. §103

The Examiner has rejected Claims 1-18 and 20-24 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,158,018 to Bernasconi et al. ("Bernasconi") in view of U.S. Patent No. 5,966,547 to Hagan et al. ("Hagan"). Applicants respectfully traverse this rejection.

Regarding Claim 1, Claim 1 recites the following claim features that are neither taght nor suggested by the Prior art combination of Bernasconi in view of Hagan:

a patch module coupled to the completion queue, the patch module to capture an incoming request cycle received by the I/O controller and to determine if the captured incoming request cycle matches one or more of preprogrammed trigger conditions, wherein the patch module can work around a captured non-posted request cycle by controlling header information loaded into the completion queue and by instructing the completion queue whether or not to discard a completion packet received from a designated end-device, wherein the requesting device is different from the designated end-device.

Applicants respectfully submit that the prior art combination of Bernasconi in view of Hagan fails to provide any teachings or suggestions regarding instructing a completion queue whether or not to discard a completion packet received from a designated end-device if the completion queue is loaded with header information from one of the modified, non-posted request cycle and the generated, new request cycle, as recited by amended Claim 1.

As correctly noted by the Examiner:

Bernasconi fails to specifically teach specifying whether the I/O controller including a patch module (patching circuitry 22) coupled to a completion queue is to be loaded with information from non-posted cycle. (pg. 3, ¶3 of the Office Action mailed April 21, 2006.)

As a result, the Examiner cites Hagan. Hagan is directed to a method and process for posting events or tasks to a shared queue and a multi-processor data processing system to post events or tasks to another processor to perform. (See, col. 1, lines 10-17.) Applicant respectfully submits that the communication between such processors to post events or tasks to another processor to perform provides no teaching or suggestion regarding the non-posted request cycles, as in amended Claim 11. Furthermore, Hagan fails to rectify the failure of Bernasconi to provide any teaching or suggestion regarding instructing a completion queue whether or not to discard a completion packet received from a designated end-device if the completion queue is loaded with header information from one of the modified, non-posted request cycle and the generated, new request cycle, much less that the requesting device is different from the designated end-device, as recited by amended Claim 1.

Consequently, Applicant respectfully submits that Claim , and all claims which depend on Claim 1, are patentable over the prior art combination of Bernasconi in view of Hagan, as well as the references of record. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 1-10.

Regarding Claims 11 and 21, Claims 11 and 21 are amended to recite the following claim feature, which is neither taught nor suggested by the prior art combination of Bernasconi in view of Hagan:

instructing the completion queue whether or not to discard a completion packet received from a designated end-device if the completion queue is loaded with header information from one of the modified, non-posted request cycle and the generated, new request cycle, wherein the requesting device is different from the designated end-device. (Emphasis added.)

Applicant respectfully submits that the above-recited feature of amended Claims 11 and 21 is analogous to the features of allowed Claim 1. Hence, Applicants respectfully submit that the prior art combination of Bernasconi in view of Hagan fails to provide any teachings or suggestions regarding instructing a completion queue whether or not to discard a completion packet received from a designated end-device if the completion queue is loaded with header information from one of the modified, non-posted request cycle and the generated, new request cycle, wherein the requesting device is different from the designated end-device, as recited by amended Claims 11 and 21.

Furthermore, Applicants respectfully submit that the Examiner's interpretation of the term "incoming request cycle" is unreasonable. The Examiner asserts that FIG. 1 of Bernasconi discloses the determination of whether an incoming request cycle matches a programmed trigger condition, as recited by amended Claims 11 and 21. Applicants respectfully disagree with the Examiner. As taught by Bernasconi:

Again with respect to FIG. 1, a bus 24 provides the current DSP program address from the embedded DSP 16 (hereafter more simply referred to as "DS") to the patching circuitry 22, the ROM 18, and the RAM 20. Additionally, DSP program software stored in the ROM 18 is provided via bus 26, the patching circuitry 22, and bus 30 to the DSP 16. Similarly, corrected DSP program software stored in the ROM 18 is provided via bus 26, the patching circuitry 22, and bus 30 to the DSP 16. Similarly, corrected DSP program software stored in the RAM 20 such as section 20b of the RAM 20 is provided via bus 28, the patching circuitry 22, and bus 30 to the DSP 16. (col. 6, lines 15-23.) (Emphasis added.)

As indicated by the cited passage above, reference numeral "24" of FIG. 1 refers to a bus, which as taught by Bernasconi, provides the current DSP program address from the embedded DSP 16 to the patching circuitry 22, the ROM 18 and the RAM 20. (See, supra.) As further disclosed by Bernasconi, the DSP program address is compared against a break address to identify flawed DSP program software embedded within ROM 18. (See, col. 9, lines 53-57.)

Applicant respectfully submits that MPEP §2111.01 requires that THE WORDS OF A CLAIM MUST BE GIVEN THEIR "PLAN MEANING;" to wit, the MPEP has established that "PLAN MEANING" REFERS TO THE ORDINARY AND CUSTOMARY MEANING GIVEN TO THE TERM BY THOSE OF ORDINARY SKILL IN THE ART.

Regarding the term "request cycles," Applicant's specification describes two categories of such request cycles, including a write request cycle that is used to transport data from a host processor to an end-user device or a read request cycle that is used to read data from the end-user device. (See, pg. 1, ¶3 of Applicant's specification.) In addition, Applicant has defined the term "non-posted request cycles" to include any request cycle that requires completion including, but not limited to, memory requests, configuration read requests and configuration write requests. (See, pg. 4, ¶0016, lines 10-14 of Applicant's specification.)

Applicant respectfully submits that the meaning of the term “incoming request cycle” to a person of ordinary skill in the art of interconnect design at the time of the invention would not include the receipt of current DSP program address over bus 24 from DSP 16 to patching circuitry 22, ROM 18 and RAM 20 to identify flawed DSP program software embedded in ROM 18, as taught by Bernasconi. Hence, the Examiner’s interpretation of the term “incoming request cycle” to include the receipt of a current DSP program address received from bus 24 is unduly broad and unreasonable since the interpretation disregards the “plain meaning” of the term to one of ordinary skill in the art of interconnect design at the time of the invention, such as the PCI Express Interconnect Protocol (see Applicants’ Specification, pp. 5, ¶ 00016.)

As mandated by case law, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

As correctly noted by the Examiner:

Bernasconi fails to specifically teach specifying whether the I/O controller including a patch module (patching circuitry 22) coupled to a completion queue is to be loaded with information from non-posted cycle. (pg. 3, ¶3 of the Office Action mailed April 21, 2006.)

As a result, the Examiner cites Hagan. Hagan is directed to a method and process for posting events or tasks to a shared queue and a multi-processor data processing system to post events or tasks to another processor to perform. (See, col. 1, lines 10-17.) Applicant respectfully submits that the communication between such processors to post events or tasks to another processor to perform provides no teaching or suggestion regarding the non-posted request cycles, as referred to by amended Claims 11 and 21. Furthermore, Hagan fails to rectify the failure of Bernasconi to provide any teaching or suggestion regarding instructing a completion queue whether or not to discard a completion packet received from a designated end-device if the completion queue is loaded with header information from one of the modified, non-posted request cycle and the generated, new request cycle, wherein the requesting device is different from the designated end-device, as recited by amended Claims 11 and 21.

Hence, Applicant respectfully submits that the Examiner is prohibited from establishing a *prima facie* case of obviousness of amended Claims 11 and 21, since all limitations recited by amended Claims 11 and 21 are neither taught nor suggested by the prior art combination of Bernasconi in view of Hagan. Id.

Consequently, Applicant respectfully submits that Claims 11 and 21, as amended, are patentable over the combination of Bernasconi in view of Hagan, as well as the references of record. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of amended Claims 11 and 21.

Regarding Claims 12-15 and 22-24, Claims 12-15 and 22-24, based on their dependency from Claims 11 and 21, respectively, are also patentable over the prior art combination of Bernasconi in view of Hagan. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 12-15 and 22-24.

Regarding Claim 16, Claim 16, as amended, recites the following claim features, which are neither taught nor suggested by the prior art combination of Bernasconi in view of Hagan:

a control logic coupled to the trigger-matching logic to select a set of instructions upon detection of at least one matched trigger condition and to execute operations as specified by the selected set of instructions, wherein if the captured request cycle that caused a trigger is a non-posted request cycle, the control logic instructs a completion queue to load the completion queue with one of the following (1) unmodified header information from the captured non-posted request cycle, (2) modified header information associated with modified non-posted request cycle, or (3) header information associated with a new request cycle generated in response the captured request cycle,

wherein the control logic instructs the completion queue whether or not to return a completion packet if the completion queue is loaded with header information from one of the modified non-posted request cycle and the generated, the new request cycle to the requesting device, wherein the requesting device is different from the designated end-device. (Emphasis added.)

As indicated by the above-recited features of amended Claim 16, the above-recited feature of amended Claim 16 recites an analogous claim feature to amended Claims 11 and 21:

wherein the control logic instructs the completion queue whether or not to return a completion packet if the completion queue is loaded with header information from one of the modified non-posted request cycle and the generated,

the new request cycle to the requesting device, wherein the requesting device is different from the designated end-device. (Emphasis added.)

Accordingly, Applicant's arguments provided above with regard to the §103(a) rejection of amended Claims 11 and 21, as unpatentable over the prior art combination of Bernasconi in view of Hagan, equally apply to the §103(a) rejection of Claim 16 as unpatentable over such references. Hence, for at least the reasons provided above, Applicant respectfully submits that Applicant's amendment to Claim 16 prohibits the Examiner from establishing a *prima facie* case of obviousness of amended Claim 16, since all claim limitations recited by amended Claim 16 are neither taught nor suggested by the prior art combination of Bernasconi in view of Hagan. Id.

Therefore, for at least the reasons provided above, Applicant respectfully submits that Claim 16, as amended, is patentable over the prior combination of Bernasconi in view of Hagan. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of amended Claim 16.

Regarding Claims 17, 18 and 20, Claims 17, 18 and 20, based on their dependency from Claim 16, are also patentable over the prior art combination of Bernasconi in view of Hagan. Therefore, for at least the reasons provided above, Applicant respectfully submits that Claims 17, 18 and 20, as amended, are patentable over the prior combination of Bernasconi in view of Hagan. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 17, 18 and 20.

DEPENDENT CLAIMS

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicant's silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending (1) are in proper form, (2) are neither obvious nor anticipated by the relied upon art of record, and (3) are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR, & ZAFMAN LLP

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By: 

Joseph Lutz / Reg. No. 43,765

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, California 90025
Telephone (310) 207-3800
Facsimile (310) 820-5988

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted electronically via EFS Web on the date shown below to the United States Patent and Trademark Office.


Suzanne Johnston

4/16/07
Date